Can J Diabetes 40 (2016) 152–157

Contents lists available at ScienceDirect

Canadian Journal of Diabetes

journal homepage: www.canadianjournalofdiabetes.com

Original Research

Eating-Disordered Behaviour in Adolescents with Type 1 Diabetes

Sónia Gonçalves PhD *, Vânia Barros MPsy, A. Rui Gomes PhD

School of Psychology, University of Minho, Braga, Portugal

ARTICLE INFO

Article history:
Received 11 September 2014
Received in revised form
11 September 2015
Accepted 17 September 2015

Keywords:
adolescents
desired weight
eating disordered behaviour
quality of life
type 1 diabetes

ABSTRACT

Objectives: To evaluate dysfunctional eating behaviour, self-esteem, social physique anxiety and quality of life in adolescents with type 1 diabetes who have differing desired weights and to evaluate the predictors of dysfunctional eating behaviour in these adolescents, with a focus on personal and psychological variables.
Methods: We evaluated 79 adolescents with type 1 diabetes (mean age of 15.71 years) of both sexes (58.2% females) using the Eating Disorders Examination Questionnaire (EDE-Q), the Rosenberg Self-Esteem Scale (RSES), the Social Physique Anxiety Scale (SPAS-R) and the Diabetes Quality of Life (DQoL) measure.
Results: Of the adolescents, 44 with type 1 diabetes reported the desire to maintain or increase their current weight, and 35 reported the desire to reduce their current weight. The participants with the desire to weigh less were mainly females who exercised regularly and demonstrated more frequent binge eating and purging. Additionally, this group exhibited an increased frequency of eating disturbances, such as restraint and eating, weight and shape concerns. Moreover, this group demonstrated increased social physique anxiety and decreased diabetes quality of life in relation to the impact of diabetes, worries about diabetes and satisfaction with life. Finally, predictors of eating disturbances included the desire for lower weight, higher social physique anxiety and lower diabetes-related quality of life.
Conclusions: The desire for a lower weight in adolescents with type 1 diabetes may increase problems related to eating behaviour and general quality of life.

Mots clés :
adolescents
poids désiré
troubles du comportement alimentaire
qualité de vie
diabète de type 1

RÉSUMÉ

Objectifs : Évaluer les comportements alimentaires dysfonctionnels, l'estime de soi, l'anxiété sociale liée à l'apparence physique et la qualité de vie des adolescents souffrant du diabète de type 1 dont les poids souhaités diffèrent et évaluer les prédicteurs des comportements alimentaires dysfonctionnels de ces adolescents en insistant sur les variables personnelles et psychologiques.
Méthodes : Nous avons évalué 79 adolescents souffrant du diabète de type 1 (âge moyen de 15.71 ans) des deux sexes (58.2% de sexe féminin) à l'aide du questionnaire EDE–Q (Eating Disorders Examination Questionnaire), de l'échelle d'estime de soi de Rosenberg (ÉESR), de l'échelle SPAS–R (Social Physique Anxiety Scale) et de l'échelle DQoL (Diabetes Quality of Life).
Résultats : Parmi les adolescents souffrant du diabète de type 1, 44 faisaient part de leur volonté de maintenir ou d'augmenter leur poids actuel et 35 faisaient par de leur volonté de réduire leur poids actuel. Les participants ayant la volonté de perdre du poids étaient principalement des filles qui faisaient régulièrement de l'exercice et manifestaient plus fréquemment des épisodes d'orgies alimentaires et de purges. Par ailleurs, ce groupe montrait une augmentation de la fréquence des troubles de l'alimentation comme les restrictions alimentaires, les préoccupations liées à l'alimentation, au poids et à la forme. De plus, ce groupe démontrait une augmentation de l'anxiété sociale liée à l'apparence physique et une diminution de la qualité de vie liée au diabète en ce qui concerne les conséquences du diabète, les inquiétudes liées au diabète et la satisfaction à l'égard de la vie. Finalement, les prédicteurs des troubles de l'alimentation étaient les suivants : la volonté de réduire leur poids, l'augmentation de l'anxiété sociale liée à l'apparence physique et la diminution de la qualité de vie liée au diabète.
Conclusions : La volonté des adolescents souffrant du diabète de type 1 de réduire leur poids peut augmenter les problèmes liés aux comportements alimentaires et à la qualité de vie générale.

* Address for correspondence: Sónia Gonçalves, PhD, Universidade do Minho, Escola de Psicologia, Campus de Gualtar, Braga 4710-057, Portugal.
E-mail address: sgoncalves@psi.uminho.pt

1499-2671 © 2016 Canadian Diabetes Association. Published by Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jcjd.2015.09.011

Introduction

Diabetes mellitus is one of the most common chronic diseases worldwide, and it is characterized by chronic hyperglycemia, which leads to macrovascular and microvascular complications. People with diabetes are responsible for multiple self-care tasks, such as the administration of insulin injections and oral medications, adherence to specific diets, exercise, weight reduction, the monitoring of injection sites and foot care (1). Type 1 diabetes is caused by autoimmune destruction of beta-pancreatic cells, and it has been reported predominantly in children younger than 15 to 18 years of age. The incidence of type 1 diabetes has been increasing by approximately 2% to 5% per year worldwide (2,3).

Disordered eating, especially subthreshold eating disorders, is a common psychological problem in people with type 1 diabetes and is associated with poor diabetes control, complications and increased mortality rates. Several studies have compared the prevalences of unhealthy weight-control practices and other disordered eating behaviours among adolescents with and without type 1 diabetes, but the findings have been inconsistent; in some studies, the prevalence of unhealthful weight-control practices was higher among youth with type 1 diabetes (4–6), but in other studies, no differences were found (7,8). In a systematic review (9) of controlled studies of female patients with diabetes compared with controls without diabetes, the prevalence of anorexia nervosa was not significantly higher (0.27% vs. 0.06%), but that of bulimia nervosa was significantly greater (1.73% vs. 0.69%). When both conditions were considered together, the prevalence of diabetes was also significantly higher (2.00% vs. 0.75%). Eating attitudes and behaviours defined as subthreshold/subclinical or disordered eating are nearly twice as common in young females with diabetes (14%) compared with controls without diabetes (8%) (5). However, the general perception that there are increased prevalences of both disordered eating and eating disorders in persons with type 1 diabetes remains controversial (10). For example, a recent meta-analysis has reported that eating problems and eating disorders are more common in adolescents with type 1 diabetes than in their peers; however, restricted analysis involving measures adapted for diabetes has reported that these differences are not significant (11). Several studies have also identified risk factors for the development of disordered eating attitudes and behaviours in adolescents with diabetes (e.g. female gender, ages between 13 and 14 years for girls and above 16 years for boys, body weight and body dissatisfaction, constant food preoccupation and the presence of other psychiatric disorders, such as depression, anxiety or substance use) (12–15).

Another important factor that affects the physical and mental health of adolescents with type 1 diabetes is their perception of the desired weight, namely the perception of their weight as being acceptable or unacceptable. In this study, the importance of perception of the desired weight on the personal and psychological well-being of adolescents with type 1 diabetes was assessed. In fact, some empirical evidence demonstrates that this variable can have an impact on eating-disordered behaviours in exercise and sports contexts (16,17). However, considerably less research has been performed concerning the role of desired weight on the personal and psychological well-being of adolescents with type 1 diabetes. Thus, this study examined the relationships between the desired weights of adolescents with type 1 diabetes and a broad set of variables, including personal (e.g. gender and body mass index [BMI]), exercise-related (e.g. attraction to exercise and frequency of exercise behaviour), psychological (e.g. social physique anxiety, diabetes quality of life and general self-esteem) and eating-behaviour variables. In addition, this study analyzed the predictors of dysfunctional eating behaviours in adolescents with type 1 diabetes that are assumed to be predictors of some of the described personal (e.g. gender, BMI and desired ideal weight) and psychological (e.g. social physique anxiety, diabetes quality of life and self-esteem) variables of the participants in this study. Overall, by analyzing these aspects, this study aimed to increase the understanding of some variables that ultimately can be included in interventions to prevent or diminish the onset of eating problems and eating disorders (18).

Methods

Participants

In this study, 79 adolescents with type 1 diabetes were evaluated (46 females, 58.2%) who ranged in age from 12 to 19 years (M=15.71; SD=2.23). The participants were divided according to the desired ideal weight. The majority (55.7%, n=44) of the participants reported the desire to maintain or increase their current weight, and 44.3% (n=35) reported the desire to reduce their current weight (Table 1). No significant differences in age were found in these groups (t [77]=54; p=59). However, significant differences in BMIs were observed (t[74]=3.42; p<.01). The group that desired lower weight had higher BMIs than the group with the same or higher desired weight (M=24.2, SD=2.75 vs. M=22.0, SD=2.84).

Measures

Demographic and exercise information

Personal (e.g. gender, age, weight, height and desired ideal weight) and exercise (e.g. attraction to exercise and exercise frequency per week) information were assessed.

The Eating Disorders Examination Questionnaire

The Eating Disorders Examination Questionnaire (EDE-Q) (19,20) is a 41-item self-report questionnaire that asks specific questions pertaining to the presence and frequency of eating-disorder behaviours and thoughts and feelings about the body over the past 28 days. Higher scores indicate greater pathology across the 4 subscales of restraint: alpha=.82 for this study; eating concern alpha=.86 for this study; weight concern alpha=.82 for this study and shape concern alpha=.76 for this study. It is also possible to

Table 1
Ages, body mass indices and genders of the participants

	Lower weight (n=35) M (SD)		Same or higher weight (n=44) M (SD)		Total (n=79) M (SD)	
Age	15.86 (1.97)		15.59 (2.43)		15.71 (2.23)	
BMI	24.21 (2.75)		22.04 (2.84)		23.00 (2.99)	
	Female n (%)	Male n (%)	Female n (%)	Male n (%)	Female n (%)	Male n (%)
Gender	26 (56.5%)	9 (27.3%)	20 (43.5%)	24 (72.7%)	46 (41.7%)	33 (58.3%)

BMI, body mass indices.